

Name: _____
 Period: _____ Table: _____

Table 1 - Circular Motion Terms

Terms	Symbol	Units	V/S	Description
Centripetal Force	F_c	N	Vector*	Center-pointing Force
Tangential Velocity	v_T	m/s	Vector*	Object's desired direction
Angular Velocity	ω	rpm	Vector**	Spinning Velocity
Radius	r	m	Scalar	Distance from Center to Object
Period	T	s	Scalar	Time for one revolution
Circumference	C	m	Scalar	Distance of one revolution

* Linear Direction

** Rotational Direction [Clockwise (CW) or Counter Clockwise (CCW)]

Circular Motion Notes (See Table 1 and Figure 1):

- According to Newton's First Law, an object will continue on a straight path unless it is affected by an external force.
 - The object wants to follow the straight path of the Tangential Velocity (v_T).
 - It is affected by the Centripetal Force (F_c) which keeps it in a circular path.
- According to Newton's Third Law, if a force is applied by one object on another, then an equal but opposite force is applied on the first object by the second.
 - The Centripetal Force (F_c) is the original force. The Centrifugal Force is the opposing force "felt" by the object.

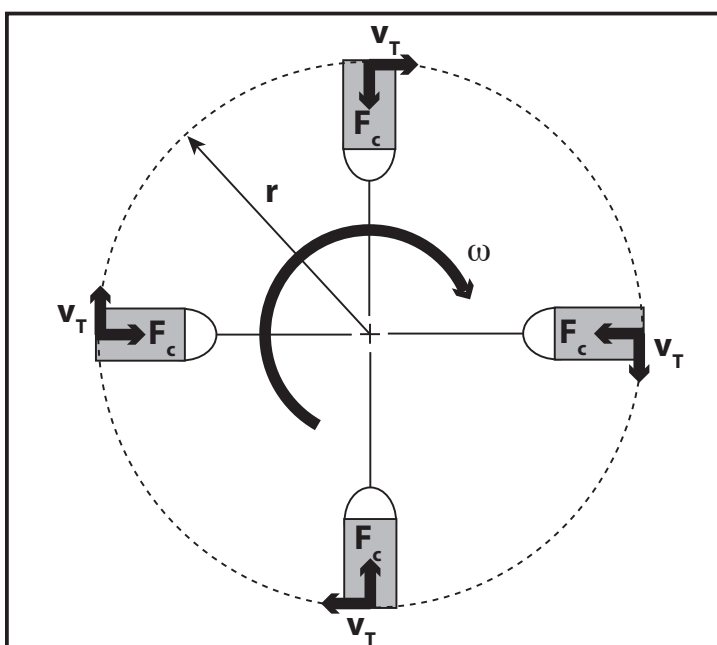


Figure 1 - Bucket in Circular Motion

Circular Motion Relationships

(For Reference Only)

$$C = 2\pi r$$

$$v_T = \omega r = 2\pi r / T$$

T = time / revolution

$$\omega = 2\pi / T$$

$$F_c = mv_T^2 / r$$

Satellite Motion

$$v_T = \sqrt{G m_E / r}$$

m_E = mass of the earth

m_{SAT} is not important